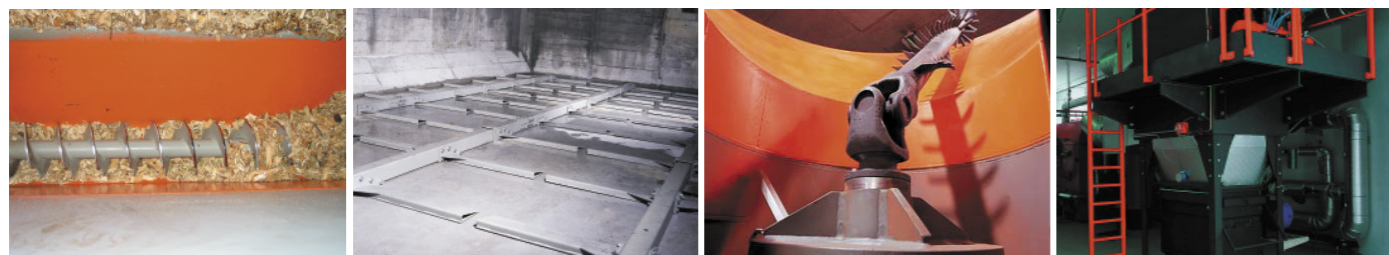
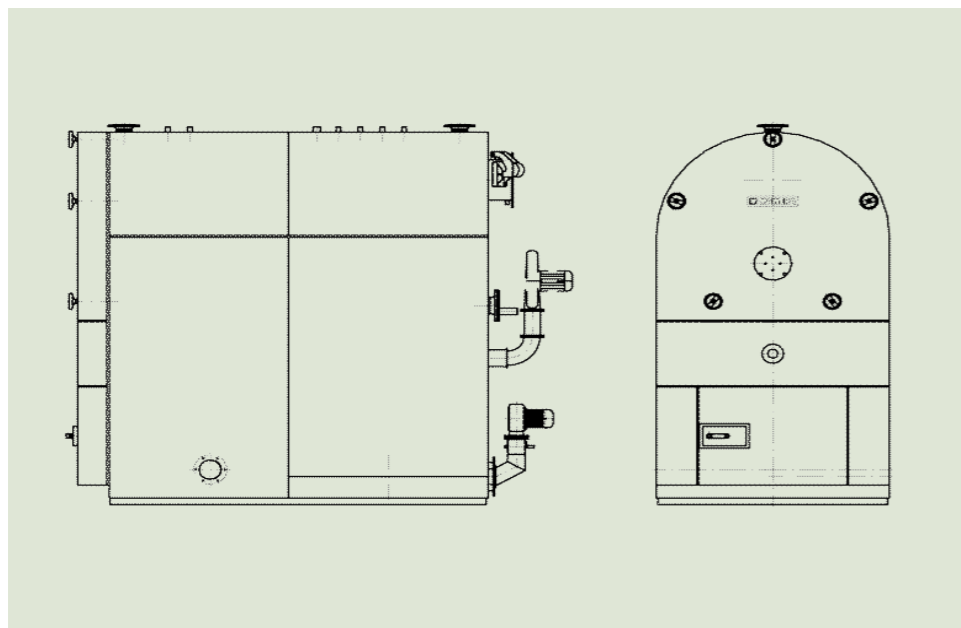


Facts and Figures: MAWERA Firebox Boiler with Double Grate Underfeed Stoker, Product Line FU RIA

Typ	Capacity*	Boiler model: Standard boiler with 230°F (110°C) outlet temperature and 58 PSI (4 bar) operational pressure; the boiler can also be built for a higher operational pressure, a higher outlet temperature and with an individual certification by the German Technical Inspection Agency (German TÜEV) or ASME (USA and Canada).
FU 110 RIA	28 - 110 kW 0.10 - 0.37 MBTU/h	Option: Combustion chamber with low NOx technology
FU 140 RIA	35 - 140 kW 0.12 - 0.48 MBTU/h	
FU 180 RIA	45 - 180 kW 0.15 - 0.61 MBTU/h	The following wood fuel may be used: lumber and sawmill by products trims, cut-offs, planer shavings, saw dust, sander dust, fines, particle boards, MDFs (medium density fiberboard).
FU 220 RIA	55 - 220 kW 0.19 - 0.75 MBTU/h	
FU 280 RIA	70 - 280 kW 0.24 - 0.96 MBTU/h	Fuel moisture content: 10% to 50% m.c. (wet basis)
FU 350 RIA	90 - 350 kW 0.31 - 1.20 MBTU/h	
FU 440 RIA	110 - 440 kW 0.38 - 1.50 MBTU/h	Fuel grade: particle size from 7/16" to 4" (11.2 to 100 mm) conveyed by a screw
FU 550 RIA	140 - 550 kW 0.48 - 1.88 MBTU/h	
FU 700 RIA	175 - 700 kW 0.60 - 2.39 MBTU/h	
FU 850 RIA	215 - 850 kW 0.73 - 2.90 MBTU/h	

* heat output depends on the type of fuel used, particularly its moisture content



MAWERA Holzfeuerungsanlagen
Gesellschaft mbH
A 6971 Hard am Bodensee
Neulandstraße 30
T +43 - (0)5574 - 74 301-0
F +43 - (0)5574 - 74 301-20
info@mawera.com
www.mawera.com

MAWERA
Kessel & Maschinenbau GmbH
D 88131 Lindau
Robert-Bosch-Straße 15
T +49 - (0)8382 - 977 012
F +49 - (0)8382 - 977 013
info@mawera.com
www.mawera.com

MAWERA (Canada) Ltd.
104 Sixth Street East, P.O. Box 2716
Revelstoke, BC
VoE 2S0 Canada
P +1 (250) 814 - 7184
F +1 (250) 837 - 5556
info@mawera.ca
www.mawera.ca

MAWERA (UK) Limited
31 Enterprise Ind. Est.
Revelstoke, BC
Britannia Way
LICHFIELD
Staffordshire WS14 9UY
P +44 - (0)1543 - 25 88 44
F +44 - (0)1543 - 41 63 11
info@mawera.com
www.mawera.com

Product information

MAWERA Firebox Boiler with a Double Grate Underfeed Stoker FU RIA Series 0.37 to 2.9 MBTU/h (110 to 850kW)

Design and Operation

This MAWERA underfeed stoker series is the result of many years of experience in developing and designing fireboxes. Its modular set-up and thought-out design allows us serial producing the units in our own workshop according to high quality standards. The firebox is equipped with a double grate, each of them having a separate primary air supply. This feature guarantees that a wide range of biomass fuels can be burned. End users range from the primary wood processing industry, to reman plants, but also district heating of public buildings or residential complexes. The unit employs a special design for completely automated combustion of dry and moist wood particles and wood

chips. For fuel with a high nitrogen content the combustion chamber is also available with a Low-NOx Reduction technology. The stoker feeds the fully refractory lined combustion chamber from underneath. A hermetically insulated Three-pass flame tube boiler sits on top of the firebox.

Wood fuel is discharged from bunkers or silos using MAWERA's hydraulic push rams or MAWERA's silo discharge system, respectively. Depending on architectural constraints and the particle size of the fuel, push rods, chain conveyors or tube screw augers can be used to convey the fuel.



MAWERA Double Grate Underfeed Stoker Typ FU 440 RIA with automatic De-ashing System

MAWERA Fire Box Boiler FU RIA with Double Grate Underfeed Stoker - Design and Operation

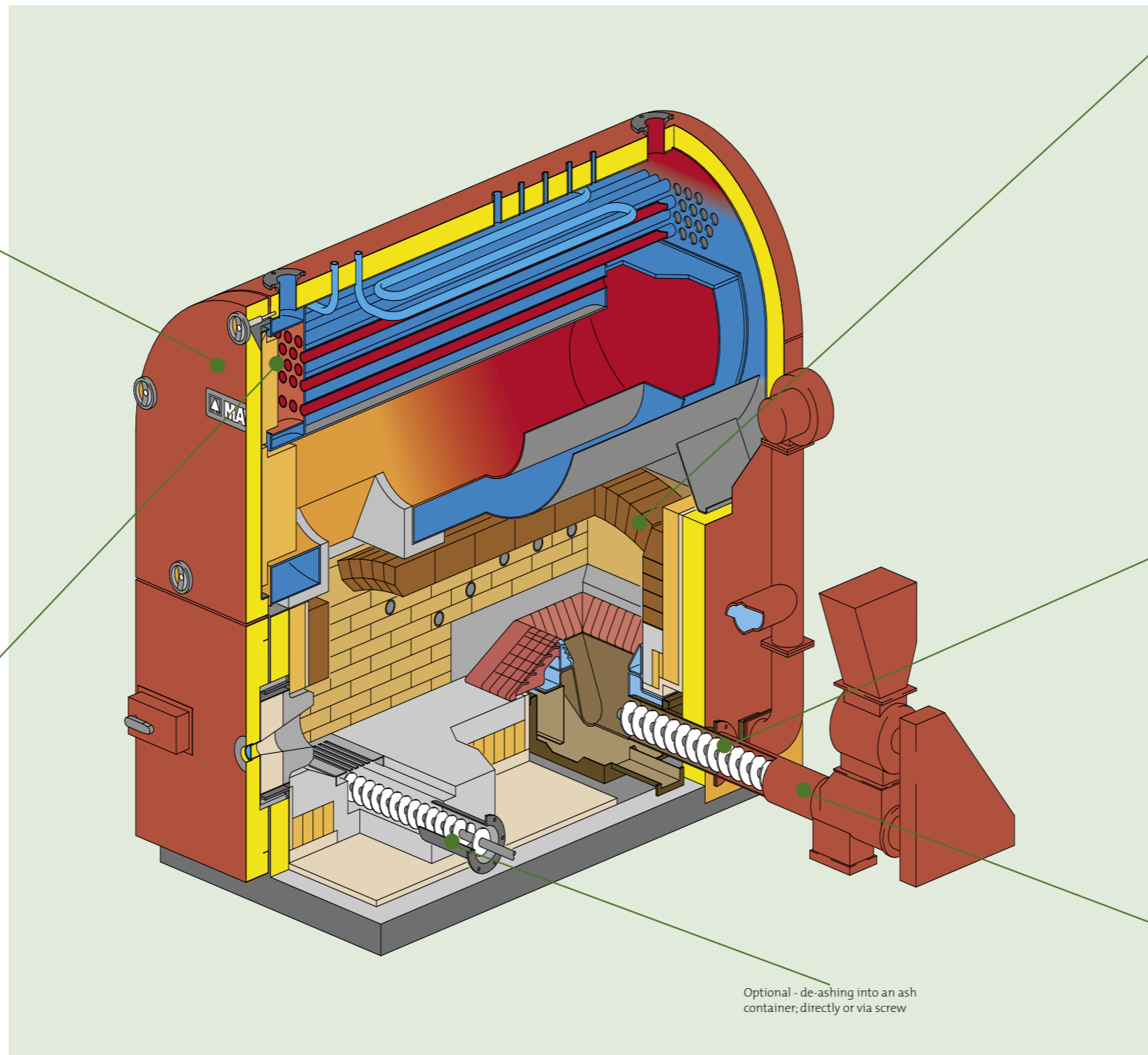
The proven micro-processor control MAWERA Logic 300 with a touch screen controls the entire system. In addition, a modem for remote maintenance, a human-machine interface ("MAVIS") and a tele-emergency alert system are available.

Main Features:

- resting firebed yields significantly lower emissions
- flame temperature control with integrated, adaptive O₂ control
- built-in emergency heat exchanger allows quick operational changes; meets DIN 4751 part 2 (German industrial standard)
- high efficiency: up to 91%
- three-pass flame tube boiler with flue gas temperatures below 374°F (190°C) at full-load
- heat output can be gradually varied between 25% to 100% of the rated capacity; low emissions even at partial load
- The unit requires the lowest attention possible
- The combustion chamber features high quality, insulating refractory, and an optimized combustion air supply that guarantee complete combustion of a wide variety of wood fuel at the highest possible conversion efficiency
- minimal radiation losses through complete insulation of the entire boiler unit



Soot blower for cleaning heat exchanger (optional)



Optional - de-ashing into an ash container, directly or via screw



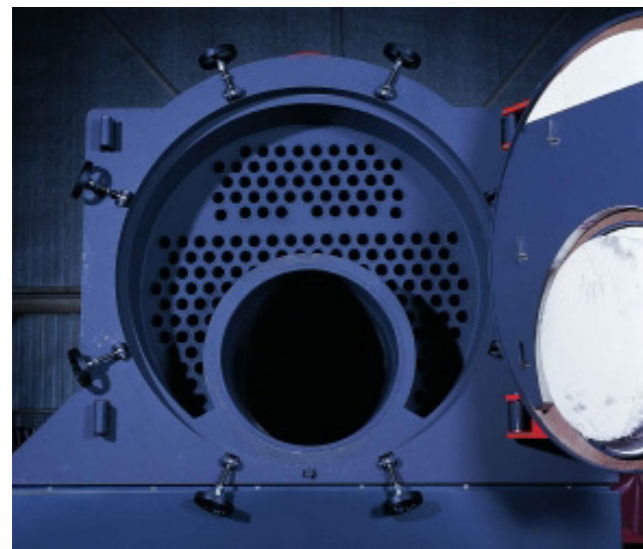
Combustion chamber design - unique multi-sectional insulation and high quality brick refractory lining



High quality, robust, heavy duty screw auger



Screw pivots around a universal joint on one end thereby allowing the screw to avoid oversized pieces inside the pipe housing



Three-pass flame tube boiler - back-up oil burner to swivel into the firebox (optional)